

Amendment Under 37 C.F.R. §1.111
Application No. 10/551,457
Attorney Docket No. 053197

REMARKS

Claims 1, 2 and 4-24 are currently pending. Support for the changes to claims 1 and 2 may be found in the specification as originally filed, for example, in original claim 3. Claim 8 has been amended to correct a translation error. See the attached translations of the claims of P2003-100376. Support may also be found in the specification as originally filed, for example, at page 15, lines 26-27. Claims 16-19 have been amended for clarity.

I. Formal Matters

The Examiner has cited Koike et al, USP 6,544,104, but did not list Koike et al on the Notice of References Cited (Form PTO-892). Applicants request that the Examiner complete the record and make Koike et al of record by listing it on a Notice of References Cited (Form PTO-892).

II. The Rejections Based on Tolles

Claims 1, 2, 7, 9, 10, 11, 19, 20, 22 and 23 are rejected under 35 U.S.C. §102(b) as allegedly being clearly anticipated by Tolles, 6,533,645.

Claims 16-18 and 24 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Tolles '645 in view of Koike et al, 6,544,104.

Claims 1 and 2 have been amended to recite the subject matter of claim 3. The Examiner has not rejected claim 3 based on Tolles. Therefore, it is respectfully submitted that the rejections based Tolles are moot and withdrawal of the rejection based on Tolles and Tolles in view of Koike et al is requested.

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III. The Rejections Based on Nishiyama et al 2004/0224623

Claims 1-15, and 19-23 are rejected under 35 U.S.C. §102(e) as allegedly being clearly anticipated by Nishiyama et al, 2004/0224623.

Claims 16-18 and 24 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Nishiyama et al '623 in view of Koike et al, 6,544,104.

The Examiner states that Nishiyama et al '623 is available as prior art under 35 U.S.C. § 102(e).

Applicants respectfully traverse the Examiner's rejection based on Nishiyama et al being available under 35 U.S.C. § 102(e). Nishiyama et al '623 does not have a "filing date". Further, the International/PCT application on which the U.S. Patent Application Publication is based on was filed after November 29, 2000 and was not published in English. See MPEP 706.02(f)(1), Example 5.

Further, Nishiyama et al '623 was published November 11, 2004, after the filing date of the instant application. Therefore, Nishiyama et al '623 is not available as prior art under 35 U.S.C. § 102(a) or (b).

For the above reasons, it is respectfully submitted that Nishiyama et al '623 is not available as prior art and it is requested that the rejections under 35 U.S.C. §§102(e) and 103(a) be reconsidered and withdrawn.

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While the Examiner has only made a rejection based on Nishiyama et al '623, the U.S. Patent Application Publication, the Examiner may wish to consider reviewing the publication date of the International/PCT application. However, for purposes of the instant rejection, the International/PCT application is not at issue.

To further prosecution, Applicants are considering filing sworn translations of their foreign priority documents. At the present time, translations of the claims are available and are attached.

IV. Conclusion

Applicants respectfully submit that their claimed invention is allowable and ask that the rejections under 35 U.S.C. §102 and the rejection under 35 U.S.C. §103 be reconsidered and withdrawn. Applicants respectfully submit that this case is in condition for allowance and allowance is respectfully solicited.

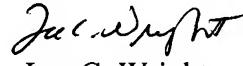
If any points remain at issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the local exchange number listed below.

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If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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Translation of claims of foreign applications

P2003-100376 (03/04/2003, Japan)

1. A polishing pad comprising a fiber including organic fiber and a matrix resin holding the fiber, wherein the organic fiber is exposed at least on the work material-side surface thereof,

wherein the matrix resin contains at least one thermoplastic resin.

(present claim 1 and 3)

2. The polishing pad according to Claim 1, wherein the matrix resin is a semicrystalline thermoplastic resin.

(present claim 4)

3. The polishing pad according to Claim 1 or 2, wherein an elastomer is dispersed in the matrix resin.

(present claim 5)

4. The polishing pad according to Claim 3, wherein the elastomer has a glass transition point of 0°C or less.

(present claim 6)

5. The polishing pad according to any one of Claims 1 to 4, wherein the organic fiber is an aromatic polyamide.

(= present claim 7)

6. The polishing pad according to any one of Claims 1 to 5, wherein the polishing pad contains an inorganic fiber in an amount of 1 to 50 wt %.

(present claim 8)

7. The polishing pad according to any one of Claims 1 to 6, wherein the organic fiber has a diameter of 1 mm or less.

(present claim 9)

8. The polishing pad according to any one of Claims 1 to 7, wherein the organic fiber has a length of 1 cm or less.

(present claim 10)

9. The polishing pad according to any one of Claims 1 to 8, wherein polishing particles are held by the organic fiber exposed on the work material-side surface.
(present claim 11)

10. A method of producing a polishing pad for use as attached to a polishing plate for flattening a work material's polishing plane, comprising a step of obtaining a mixture of a fiber including organic fiber and a matrix composition containing a thermoplastic resin compound by blending, a step of tabletizing the mixture, and a step of molding the tablet into the sheet shape by extrusion molding.

(= present claim 19)

11. A method of producing a polishing pad for use as attached to a polishing plate for flattening a work material's polishing plane, comprising a step of obtaining a mixture of a fiber including organic fiber and a matrix composition containing a thermoplastic resin compound by blending, a step of tabletizing the mixture, and a step of molding the tablet into the sheet shape by injection molding.

(= present claim 19)

12. The method of producing a polishing pad according to Claim 10 or 11, further including a step of exposing the fiber on the surface.

(present claim 21)

13. A polishing method of polishing a work material's polishing plane, comprising polishing a work material pressing the polishing plane of the work material to the organic fiber-exposed face of the polishing pad according to any one of Claims 1 to 9, and sliding the work material and the pad relatively while supplying a polishing solution to the space between the work material's polishing plane and the polishing pad.

(present claim 22)

14. The polishing method according to Claim 13, comprising polishing a metal film consisting of a single layer or laminated layers to remove at least part of the metal film.

15. A polishing method comprising a first polishing process of polishing at least a metal layer of a substrate having an interlayer insulating film carrying a surface composed of a concave portion and a convex portion, a barrier conductor layer coating the interlayer insulating film along its surface and a metal layer filling the concave portion to coat the barrier conductor layer, to expose the barrier conductor layer on the convex portion, and a second polishing process of polishing at least the barrier conductor layer and the metal layer on the concave portion to expose the interlayer insulating film on the convex portion, wherein the polishing pad according to any of Claims 1 to 9 is used for polishing in at least the second polishing process.

16. The polishing method according to Claim 15, wherein the interlayer insulating film has a dielectric constant of 2.7 or less.

(< present claim 23)

P2003-103477 (07/04/2003, Japan)

1. A polishing pad for use as attached to a polishing plate for polishing a work material, having fiber mainly consisting of polyester exposed on the polishing-side surface thereof, wherein the maximum length of the exposed fiber is 0.1 mm or less.

(= present claim 12 and 13)

2. The polishing pad according to Claim 1, wherein a chopped polyester fiber is dispersed in matrix organic resin.

(present claim 14)

3. The polishing pad according to Claim 1 or 2, wherein a polyester nonwoven fabric is laminated in matrix organic resin.
(present claim 15)

4. A method of producing a polishing pad for use as attached to a polishing plate for flattening a work material's polishing plane, comprising a step of mixing of an organic fiber and a resin, a step of tabletizing or pelletizing the mixture of the organic fiber and the resin, and a step of molding the tablet or pellet into the plate shape by extrusion or injection molding.
(= present claim 19)

5. A method of producing a polishing pad for use as attached to a polishing plate for flattening a work material's polishing plane, comprising a process of forming a fibrous resin-impregnated sheet-shaped base material containing mainly a polyester as a fiber, a step of laminating the fibrous resin-impregnated sheet-shaped base material and molding the laminate under high temperature and high pressure.
(= present claim 20 and 13)

6. A polishing method of polishing a substrate, comprising pressing the substrate to the organic fiber-exposed face of the polishing pad according to any one of Claims 1 to 3, and sliding the substrate and the pad relatively while supplying a polishing solution to the space between the substrate's polishing plane and the polishing pad.

(present claim 22)

P2003-103624 (08/04/2003, Japan)

1. A polishing pad that is useful for optical detection of the polishing end point during polishing of the work material surface, wherein the polishing pad consisting of a substantially non-expandable resin containing an organic fiber in an amount of 1 to 20 wt %, and allows transmission of a light having a

wavelength in the range of 190 to 3,500 nm, wherein a surface of the pad during polishing has exposed organic fiber thereon and has the functions of transporting and retaining polishing slurry particles.

(\equiv present claim 16)

2. A polishing pad that is useful for optical detection of the polishing end point during polishing of the work material surface,

wherein the polishing pad contains a region made of a substantially non-expandable resin containing an organic fiber in an amount of 1 to 20 wt %, and the region allows transmission of a light having a wavelength in the range of 190 to 3,500 nm, wherein a surface of the region coming in contact with the work material during polishing has exposed organic fiber thereon and has the functions of transporting and retaining polishing slurry particles.

(\equiv present claim 17)

3. The polishing pad according to Claim 1 or 2, wherein the organic fiber is an aramide fiber.

(present claim 18)

4. A polishing method of a work material of detecting the polishing end point optically by using the polishing pad according to any one of claims 1 to 3.

(present claim 24)

5. The polishing method of a work material according to claim 4, comprising polishing a polishing plane of a work material pressing the polishing plane of the work material to the organic fiber-exposed face of the polishing pad, and sliding the work material and the pad relatively while supplying a polishing solution to the space between the work material and the polishing pad.

(present claim 22)